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A Summary of Current Research Program 10/1/66  
and Preliminary Report of Research Progress  
for 9/1/65 to 9/30/66

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FARMER COOPERATIVE SERVICE  
of the  
UNITED STATES DEPARTMENT OF AGRICULTURE  
and related work of the  
STATE AGRICULTURAL EXPERIMENT STATIONS

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CURRENT SERIAL RECORDS

This progress report is primarily a tool for use of scientists and administrators in program coordination, development, and evaluation; and for use of advisory committees in program review and development of recommendations for future research programs.

The summaries of progress of USDA and cooperative research include some tentative results that have not been tested sufficiently to justify general release. Such findings, when adequately confirmed, will be released promptly through established channels. Because of this, the report is not intended for publication and should not be referred to in literature citations. Copies are distributed only to members of Department staff, advisory committee members, and others having a special interest in the development of public agricultural research programs.

This report also includes a list of publications reporting results of USDA and cooperative research issued between September 1, 1965 and September 30, 1966. Current agricultural research findings are also published in the monthly USDA publication, News for Farmer Cooperatives. This progress report was compiled in the Farmer Cooperative Service, U.S. Department of Agriculture, Washington, D.C.

UNITED STATES DEPARTMENT OF AGRICULTURE  
Washington, D. C. 20250  
October 1, 1966



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## INTRODUCTION

The function of the Farmer Cooperative Service is to help rural people build effective cooperative business enterprises to serve their needs in marketing farm products, procuring production supplies, and obtaining other needed services. The Service conducts a continuous program of economic research and does educational and advisory work to assist the 3 million members of marketing, purchasing, and service cooperatives.

Studies are made to improve cooperatives' organization structure, management, financing, and operating methods. Marketing research is conducted on methods, costs, and other aspects of processing, distribution, and selling of farm products by cooperatives. Results of the research are designed to help farmers, cooperatives, public officials, and others make sound operating and policy decisions relating to the more effective use of cooperatives in developing rural America.

On September 30, 1966, the Farmer Cooperative Service had a total authorized staff of 94, including 49 professional economists and 1 marketing specialist. All personnel engaged in research, advisory, and educational work was located in Washington, D.C. This report only concerns the research program of the Service and therefore it does not include a discussion of either advisory assistance that is not of a research character, or any educational activity. Further, the manpower reported here does not include personnel working in Washington, D.C., Brazil, and Paraguay under A.I.D. authorizations.

The three program Divisions -- Marketing, Purchasing, and Management Services -- correspond to the three work areas in this report. The Service actively cooperates with other organizational units of the Department, other Federal and State agencies, and land-grant universities to conduct research on major problems of mutual interest. Some research of the Service is conducted by contracts and cooperative agreements with other public and private organizations. Also, Service personnel participates in the planning, reviewing, and at times, the executing of research conducted by regional research groups of land-grant university personnel.

Cooperatives represent a major method for meeting the marketing and purchasing problems of family farms and for strengthening their bargaining position. Farmers can get higher returns for the products they market and save money on supplies and services they purchase by increased use and constant improvement of their cooperatives, which are devoted specifically to these objectives.

Cooperative members urgently need research findings on a wide range of topics to guide them in realizing better performance and results through the use of cooperatives. Marketing cooperatives must, in some commodities, create entirely new systems extending from procurement to processing to sales methods, all with an increasing emphasis on the quality, quantity, and service demands of mass merchandising. Purchasing cooperatives must make comparable adjustments to changes in farming equipment and methods.

There is increased interest in and use of farm service activities by cooperatives.

Cooperatives need to improve their organization structure and develop management competent to deal with increasingly complex problems and operations. More attention needs to be given to membership participation so as to maintain the distinctive cooperative features arising from member control.

Cooperatives also must capitalize on the potential benefits of transportation innovations. In general, however, cooperatives must meet demands for improved transportation services while costs continue to increase.

Research is needed to identify in specific terms the probable areas of greatest benefits to members, and effective operating policies and methods. Opportunities in low-income rural areas call for special attention. Rural cooperatives are important self-help devices for developing and improving these areas. For a successful expansion of cooperative activity to serve low-income rural people, information is needed on a wide variety of cooperative services that can help improve living conditions for low-income people.

As a step toward implementing the recommendations for a National Program of Research for Agriculture made jointly by the Association of State Universities and Land-Grant Colleges and the USDA, a section has been added to each of the Areas in this report. It comprises a list of the related publications of the State Agricultural Experiment Stations in addition to those heretofore reported covering the results of USDA and cooperative research. In future years, it is anticipated that information will be available to permit reporting of achievements resulting from State research in a format comparable to the present reporting of the USDA and cooperative research.

Some recent examples of research with cooperatives are as follows:

Farm supply cooperatives serve low-income rural residents. A recently completed study of two farm supply cooperatives in low-income rural areas of Appalachia shows that these associations are an important source of supplies for low-income people. Purchases by low-income patrons accounted for nearly half the total volume of the cooperatives studied. These sales were made without unduly extending the total volume of credit, and losses on credit extended low-income patrons did not exceed losses on credit extended to other classes of patrons.

Sales of goods and services also were made without adding unusual or additional lines of goods or services to those normally provided by the cooperatives. The findings indicate that established cooperatives can perform a valuable service in some low-income areas and at the same time continue effective operations.



Capital structure. A nationwide survey of the capital structure of all farmer marketing, farm supply and related service cooperatives showed that regional farmer cooperatives, as a group, are sound business organizations.

Combined assets of the 448 regionals amounted to nearly \$3 billion at the close of fiscal years ended in 1962. Combined equity capital amounted to \$1.5 billion or 50 percent of total assets. Fifteen percent of combined equity capital was purchased out-right by patrons and others, 54 percent was acquired through investment of patronage refunds, 10 percent through per-unit capital retains, and the other 21 percent was acquired by a combination of these three methods. Combined borrowed capital ranged from over \$1 billion (excluding Commodity Credit Corporation loans to tobacco marketing regionals) during the 1962 peak period to \$619 million at the close of the 1962 fiscal period. Banks for cooperatives supplied 60 percent of borrowed capital unpaid at year-end fiscal dates as compared to 20 percent supplied by individual and 11 percent supplied by commercial banks. The 448 associations reported combined net savings of \$288.4 million of which 44.5 percent was paid in cash patronage refunds and 7.4 percent in cash dividends and interest on equity capital.

Losses in transporting and handling grain. Study of weight losses on 13,611 rail shipments of grain from 107 elevators and 777 barge shipments of grain from river facilities of six regional cooperatives showed losses during handling and transporting of 558 pounds of grain per car shipped. Of 700 rail cars furnished to elevators for loading, 85 percent were found to have defects that could contribute to losses. The study also showed that less than half the 107 elevator managers filed claims for recovery of losses although all experienced such losses.

Citrus payment methods under emergency conditions. Immediately following the severe freeze of December 1962, Florida citrus cooperatives began emergency harvest of damaged fruit. Many standard cooperative practices were modified in the process. Under contract with FCS, the University of Florida studied pooling practices in the post-freeze period to evaluate the application of the dual standards of equal treatment and efficient operation. This study helped citrus cooperatives use a modified basis for making pool returns after the January 1966 freeze.

Wool pools. A nationwide study was completed of 234 wool pools that marketed 16 million pounds of wool for 36,000 growers. Findings indicate that wool pools enable growers to market their wool more effectively and increase their net returns from wool by 3 to 4 cents a pound. A report was published suggesting methods for improving pool organizations, assembly, grading, selling, and management practices.

Cooperative marketing of nonfat dry milk. A study of the experiences and practices of cooperative dry milk manufacturers and the experiences of commercial users of the product shows that to improve marketing efficiency, more direct contact is needed between manufacturers and users, better

training in the use of dry milk in specific products is needed for salesmen, and more coordination is desirable for effective sales and service activities.

Examples of research by State agricultural experiment stations and cooperative programs follow:

Nebraska. Volume cost relationships in farm supply cooperation. Potential improvements in the efficiency of petroleum distribution to Nebraska farms would result in annual savings of about \$3.5 million or \$40 per farm. For the U.S. as a whole, indications are a potential saving of about \$142 million. This depends on optimum levels of plant utilization, annual volume, delivery size, density of farms, and truck size. For example, optimum reorganization of the market system in Nebraska would reduce plant numbers from about 1,557 to 92 and delivery truck numbers from about 1,557 to 184.

While excess retail facilities in the petroleum industry is an inherent structural feature, cooperatives have the opportunity and incentive to be pace setters in the distribution phase of the industry. Cooperatives should consider consolidation of their present facilities and the purchase of competitors to improve plant utilization and reduce cross hauling.

Hawaii. Financing agricultural cooperatives in Hawaii. A report is being prepared on financing methods of Hawaii's cooperatives and some of their general managerial characteristics. The study centers mainly on available sources of capital, costs of capital acquisition, methods of capital acquisition, capital growth related to total business activity, and the relationship of financial soundness of the organization to its management practices. A number of alternative capital sources were considered which are presently not used by cooperative associations, but might be usefully employed.

California. Development of pooling practices and revolving fund financing by agricultural marketing cooperatives. A book of national and international significance resulted from this research. The book, co-authored by H. E. Erdman and Grace H. Larsen, is entitled, *Revolving Finance in Agricultural Cooperatives*.

It was designed to serve the needs of anyone concerned with starting or perpetuating a cooperative. Research showed that the revolving fund method of financing developed in farmer cooperatives from efforts to deal with the basic problem in cooperative financing--namely, how to maintain the continuity of the enterprise while keeping control of it in the hands of the patrons with the passage of time. This method of financing has, among others, the advantage of flexibility; revolving fund programs can be modified as capital requirements change. As part of the analysis of cooperative financing, attempts have been made to indicate that by additional adjustments, revolving finance can be made even more useful.

## AREA NO. 1: COOPERATIVE MARKETING

Problem: Farmers continue to increase their use of cooperative marketing.

These cooperative operations are conducted in a marketplace where handling and processing, transportation, and distribution technology is changing rapidly, and market organization and practices are undergoing major changes. Farms themselves have changed. Farmers and their cooperatives need research results that relate to these developments and new conditions to assist them in marketing efficiently. Such research will assist farmers to strengthen their bargaining power, increase marketing efficiency, and meet effectively the quality, quantity, and service needs of today's food and fiber marketplace.

Cooperative marketing is a direct and major way for farmers to get maximum returns for their products. Farmers own and operate cooperatives specifically to increase their income from crops and livestock. Gains are not automatic, however. Cooperatives must plan and actually conduct the specific marketing program and services that will yield best returns for their members. Marketing cooperatives must know what the consumer demands, as reflected in the market. They must be able to estimate the cost of serving the market in different ways. They must understand the possibility of major economies in a well-managed joint sales program, and the methods and potentials of bargaining, and the implications of a changing market structure on operations. Management must achieve minimum costs through appropriate organization, good use of existing plant and personnel, and the correct selection and use of new equipment and methods.

## USDA AND COOPERATIVE PROGRAM

The Department conducts a continuing long-range program of basic and applied research and technical assistance on problems of marketing farm products cooperatively. Studies are made on the organization, operation, and role of farmer cooperatives in marketing. While most of the research is done to help members directly improve the operation of their cooperatives, the results also often benefit other marketing firms. The work is centered in Washington, D. C. Many of the studies, however, are done in cooperation with various State experiment stations, extension services, and departments of agriculture.

Federal scientific man-years devoted to research in this area totaled 17.9. Of this number, 4.0 was devoted to improving cooperative sales distribution and pricing methods, 4.3 to potentials in cooperative marketing, 3.7 to improving operating and handling methods, and 5.9 to improving the organization, financing, and management of marketing cooperatives.

Research also is conducted under contract with land-grant colleges, universities, cooperatives, and private research organizations. This report includes work conducted during the present period, or release of results of work earlier completed, through contract research performed by colleges and universities in Iowa, North Carolina, and West Virginia, and by one private contractor.



## PROGRAM OF STATE EXPERIMENT STATIONS

Most commodity marketing research of the agricultural experiment stations is helpful to marketing cooperatives. Some projects, however, deal specifically with cooperative marketing problems, opportunities, and impacts. The total research effort on cooperative marketing in the State experiment stations is 0.8 scientific man years.

### PROGRESS -- USDA AND COOPERATIVE PROGRAMS

#### A. Improving cooperative sales, distribution, and pricing methods

Wholesale and retail marketing practices are continuing to change rapidly, and there have been fundamental changes on the farm. For these reasons sales and distribution and pricing methods need to be studied carefully to plan and realize methods and policies that are technically efficient and obtain good returns for producers. Bargaining methods and pooling are two topics that require major research emphasis. Research on these problems included work in several commodities.

1. Bargaining. Research continues on bargaining methods and results in dairy, deciduous fruits and tree nuts, eggs, poultry, sugar beets and vegetables. This research seeks to appraise the status, role, and potentials of cooperative bargaining as a means of stabilizing and enhancing the incomes of producers.

2. Dairy. Analysis of sales methods and distribution practice of dairy cooperatives indicate they market most dairy products to wholesale accounts. In 1964 sales federations marketed more than 40 percent of the butter and over 50 percent of the dry milk products manufactured by cooperatives. The study indicates very limited coordination in the marketing of the more perishable manufactured or processed dairy products.

In many of the large fluid milk markets, cooperatives have strengthened their bargaining position through federated marketing programs.

A study of pooling principles and practices is underway. This study has examined the methodology and effects of five closed base pooling plans used by southern and western dairy cooperatives.

Preliminary findings indicate that dairy producers, through their cooperatives, have successfully used these pooling systems primarily to tailor milk production to the seasonal needs of the individual markets. Further analysis will examine the effects of these plans on producers entering and leaving the market and will describe in detail the method of operation of each pooling system.

3. Poultry. A study was initiated to ascertain the marketing functions performed by broiler auctions with emphasis on price influence. Preliminary findings are: (1) Of the 12 broiler auctions organized in eastern United States and Texas between 1952 and 1965, only 3 remain. (2) Most of the broiler auctions selling live broilers made substantial contributions to pricing and prices; however, the impact of higher prices served to restrict output and the most rapid growth occurred in areas with lowest prices and limited alternative employment opportunities. (3) Four states in which broiler auctions were discontinued have the lowest live broiler prices in the United States. And they have the fastest income growth from broilers. (4) Live broilers in 1952 were sold from many independent producers to processors. A few integrators patronized each of the auctions operating in 1965 to balance their supplies with sales contracts and orders. (5) Since many sale commitments are made before the auction starts, it is possible for integrators to match long and short supplies with sales commitments while they participate in the pricing process. (6) It is possible for less than 5 integrated feed dealers and processors to maintain a successful auction. (7) Production area quotations provide a basis for negotiating production contracts. (8) Auction prices can serve as a starting point in negotiations for ready-to-cook sales in metropolitan areas; however, a smaller volume is traded each year.

A study of pooling and producer payment practices of egg marketing cooperatives shows that most associations use a market price quotation and a system of differentials in paying egg producers. Pricing differentials vary widely among the 18 cooperatives studied. Variation in value relates to costs, savings, and nature of competition. Individual producer payments based on the cooperative's cost of serving him are more equitable than individual payments based on the cooperative's average costs. Likewise, each patron's net savings based on his contribution to savings is more equitable than determining patrons' net savings on an average basis.

Only a few farmer cooperatives calculate producers' net savings and losses in proportion to differences in volume, quality, distance, and marginal cost of serving each producer. Large volume producers find price differentials related to an individual member's cost more attractive than payments based on average cost of the entire association. Equitable treatment of the largest egg producers is necessary in keeping them in a cooperative with small volume producers. Savings resulting from efficiency of size are necessary for egg producer cooperatives to remain in business and maintain access to markets.

#### B. Potentials in cooperative marketing

The present and potential role of cooperative marketing requires study in several commodity areas. Current information on cooperative operations can be related to production and marketing conditions.

The objective of such research is to develop recommendations about operations and services of existing cooperatives and particularly to identify opportunities for farmers to increase their marketing returns by developing significant new areas of cooperative operation.

1. Cotton. A study of the feasibility of central ginning in the United States was completed. Findings indicate that under present ginning practices gins usually operate at full capacity for the equivalent of one month or less per year. Through central ginning it is possible to extend the ginning period from 3 months to nearly a year at capacity rates, thus improving efficiency in the use of equipment and facilities. The indicated potential savings was about \$5 a bale for central ginning over conventional gins or about 33 percent. Furthermore, improvements in quality, such as by blending, are possible with central ginning.

2. Dairy. A study of cooperative marketing activities shows that only 1,245 dairy cooperatives operated for their full 1964 fiscal year. Yet, volume of milk marketed had increased to 76 billion pounds -- two-thirds of all milk sold to plants and dealers. The cooperative structure, nevertheless, continues to be largely that of a local organization operating a single plant facility. Out of 1,025 cooperatives operating milk handling facilities, only 89 had more than one plant facility and only 16 of these had 5 or more plants.

Further analysis is being made of cooperative plant locations, major equipment and operating capacity in exploring potential benefits to dairy farmers from increased coordination of their marketing activities.

3. Forestry. Research to determine the feasibility of alternative forest-based activities and enterprises in Maryland, Pennsylvania, and West Virginia was reduced in scope, both in terms of geographic area and respondents covered. The study is now limited to West Virginia and company landowners have been eliminated from the survey of woodland owners. West Virginia University, the contractor, completed the field work and data are being summarized.

4. Fowl. A study was initiated to determine the feasibility of establishing cooperative marketing facilities in the Northeast to market fowl.

5. Fruits and vegetables. Work continued on a study of the present status and trends in the cooperative marketing of fruits, vegetables, and nuts. Potential ways in which these cooperatives might increase their operating efficiency and marketing effectiveness through integration, coordination, consolidation, expansion, and other means are also being evaluated.

A study was initiated to determine the potential of small fruit and vegetable cooperatives on the Coastal Plains of North Carolina. This work is being conducted under a cooperative agreement with the Agricultural and Technical College of North Carolina.

6. Grain. With increasing quantities of wheat and flour being purchased on specific quality characteristics and with increasing competition in merchandising, several of the regional grain cooperatives have installed experimental milling and baking laboratories so they can determine the quality of wheat received and, in turn meet the specifications of the flour miller. A study of the use, effectiveness, costs and benefits of these laboratories is just getting underway.

7. Livestock. Studies were made to determine the extent of horizontal and vertical integration among livestock marketing and related cooperatives. Livestock producers, through their cooperatives, have moved to integrate their cooperative activities, but to date they have made only modest progress towards fully integrated operations.

A guide was developed to assist livestock marketing cooperatives that wish to enter the various phases of livestock production, feeding, marketing, slaughtering, processing and distribution of livestock and meat products.

Preliminary findings of a study in the New England States relating to the feasibility of cooperative slaughtering, processing, and marketing of the end products of cull dairy cows and veal calves indicates that there are opportunities to increase the returns to farmers in that region.

8. Sugar. Work was initiated on a study to appraise the status, organizational structure, operating experience, and potentials of sugarcane cooperatives.

9. Sweetpotatoes. An appraisal was made of the potential of establishing a sweet potato marketing cooperative to serve low-income farmers in Louisiana. Findings indicate the proposed cooperative marketing venture had a reasonable chance of succeeding if an educational program was included and members began their operation under skilled hired management with no immediate involvement in a large fixed investment.

10. Turkeys. Research was initiated to appraise the scope and potential of turkey marketing cooperatives in the United States.

#### C. Improving operating and handling methods

Research was underway in several commodity fields to examine new methods, equipment, and structures of efficient and safe processing and storage of agricultural products by cooperatives.

1. Cotton and oilseeds. Comparisons of costs of cooperative cottonseed oil mills for 1964-65 provided guides for managers to use in improving their operations. Weaknesses and potential improvements were revealed.



Analysis of electric rates and power costs of oil mills indicated rate reductions are needed and may be obtained by some oil mills. Some mills can likely reduce power costs by operating engine generator systems. Research indicates that basket storage of cotton can be used by some gins to reduce ginning costs by \$1 or more a bale. Adequate volume, repeated use of baskets during the ginning season, and efficient use of labor are needed for lowering costs with basket storage systems.

2. Dairy. A study is underway to develop a standard departmentalized cost accounting system for management of dairy cooperatives that will provide management with information needed to better control costs and improve efficiency and quality of service.

Work on the operating practices and procedures of a fluid milk packaging cooperative is underway. Preliminary findings indicate that changes in procedures and material handling systems will reduce costs \$40,000 a year.

3. Deciduous fruit. A study of the operating and handling methods of an apple marketing cooperative in New York was completed. Study findings show that strong grower-member contracts and specification selling are essential in today's marketing environment.

4. Livestock. Work continued on a study of pooling of veal calves at group of cooperative auctions. The study included the feasibility of such an undertaking and the procedures which must be adopted and followed to assure efficient and successful operations. The findings of this study will be useful not only to the auctions studied, but to other auctions interested in adopting pooling.

Findings in studies of four cooperatives in Wisconsin indicate it would be advantageous to livestock producers for these cooperatives to merge into one State-wide association. Farmers would gain greater bargaining power, marketing costs would be lowered, and services would be improved.

A study of two large livestock cooperatives serving Iowa, Nebraska, Kansas, Missouri, and portions of adjoining states shows that cooperatives serving livestock producers in that area need to make organizational and operating adjustments to provide the services needed by large-scale livestock producers and to be effective in a changed marketing environment.

5. Rice. A study of costs and other economic considerations in drying and storing rough rice in 74 on-farm and 21 off-farm facilities was completed. Among on-farm units, buildings with bulk bins incurred the highest operating costs followed by round bulk bins and multipass units. For the off-farm commercial facilities, no significant difference existed in the total combined cost of drying and storing between cooperative units and those not cooperatively owned. Little average differences existed in the quality of rice resulting from the use of on-farm and off-farm facilities.



D. Improving the organization, financing, and management of marketing cooperatives

Studies were made to determine ways to improve the efficiency and assist cooperatives improve their services by analysis of organization, financing, and management practices.

1. Citrus. Work was initiated on a study to appraise the possibilities of coordinating the marketing efforts of a group of citrus processing cooperatives in Florida.
2. Dairy. A study was made to determine the feasibility of unifying the fluid milk bottling and manufacturing operations of a group of cooperatives serving farmers over a relatively broad area. The study indicated that, with consolidated operations, returns to farmers would be increased by \$650,000 annually.

Two case studies to determine the feasibility of unifying operations of Grade A bargaining association with cooperatives primarily engaged in manufacturing dairy products are underway.

3. Fruits and vegetables. A study of the organizational characteristics and operating methods of selected marketing agencies which have successfully marketed fruits and vegetables for member associations on a joint basis is continuing.
4. Grain. A study of inventory controls, practices, and responsibilities at local cooperative elevators was completed. A report is being prepared describing the wide variety of practices and methods used to control grain inventories in local elevators. The annual analysis of the operations and financial status of regional grain cooperatives was continued. These cooperatives are handling increased volumes of grain and with increased emphasis on merchandising, both domestic and export. Work is underway to determine the feasibility of establishing cooperative deep water elevators at Southeast and Gulf Coast ports. Work continues on studies of grain marketing, processing, utilization, and transportation problems that are peculiar to the South. A study was completed of the cooperative marketing of soybeans, including facility requirements, in southwest Louisiana and East Texas.
5. Oilseeds. Work is underway on a general study of the organization and operating experience of cottonseed and soybean oil processing and marketing cooperatives. This study will provide guidelines for those interested in financing and managing existing cooperative oil mills or in organizing new ones.

6. Potatoes. A study was made of two major potato marketing cooperatives in Aroostook County, Maine. Findings indicate that the potato marketing program would be improved, marketing costs would be reduced, and income to potato producers increased by merging these marketing cooperatives.

7. Poultry. A study was completed of the feasibility of coordinating or merging several producer organizations in four New England States. Findings indicate that it was not feasible to consolidate feed operations, but egg marketing activities should be consolidated and merged. A study was made of the poultry industry in southern California to determine the long range potential for feed cooperatives in the area and adjustments such cooperatives must make to better serve producers as they increase the size of their flocks.

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## AREA NO. 2: COOPERATIVE PURCHASING

Problem: Farm units continue to increase in size and in specialization.

This has emphasized the interdependent nature between agriculture and the other sectors of the economy. There has been a growing dependence upon purchased inputs of farm supplies and services as farmers have substituted various forms of capital inputs for labor. As a result there is a need to give attention to various methods of reducing the costs of inputs as a means of increasing the farmers' net income.

The relatively simple cooperative purchasing systems of the past have become more complex by diversifying and by affiliating and coordinating to perform certain basic procurement and manufacturing functions. There is a need to determine the role of these complex organizations. There is the potential of further reducing costs by performing additional services where additional coordination is needed. There are some instances, however, where the existing system may need to be streamline to provide goods and services at minimum cost to large-scale farm units. There is a need to develop guidelines as to the number and effective scale of operations of purchasing and service type cooperatives.

The modern farm is also a part of a community. In many instances the needs of nonfarmers can be served by existing cooperatives. In addition, there are the total community needs that must be considered, particularly if attractive rural opportunities are to be considered as a realistic alternative to migration to urban centers. Cooperatives offer a possible organizational device for meeting some of the community needs as well as the strictly farm needs. There is also the continuing need to determine how cooperatives can be most effective in assisting in alleviating poverty.

## USDA AND COOPERATIVE PROGRAM

The Department has a continuing program in basic and applied research. This research effort is further implemented by technical assistance and by an educational program designed to aid farmers in improving cooperative purchasing of production supplies and related farm services. Research efforts are directed to improving organizational structures; pricing practices; improving procurement and distribution systems; changing character and operations of local processing organizations; the role of rural credit unions and farm supply cooperatives in low-income areas; problems of unification and coordination of the operations of two or more cooperatives; and developing efficient operational methods for serving modern agriculture. While most of the work is done with cooperatives and cooperative members, the results are also useful to other suppliers of production items and farm related services.

Research is also conducted under contract with land-grant colleges, universities, cooperatives, and private research organizations.



Federal scientific man-years devoted to research in this area totaled 6.8. Of this 1.1 was devoted to improving sales and distribution methods; 2.2 to potentials of cooperatives; 1.0 to improving operating and handling methods; and 2.5 to improving organization, financing, and management of farm supply and service cooperatives.

#### PROGRAM OF STATE EXPERIMENT STATIONS

Many State experiment stations do a considerable amount of research on technical aspects of feeds, fertilizers, seed, farm equipment, and farm supplies that is of value to purchasing cooperatives. A limited number of projects also deal specifically with cooperative purchasing problems, opportunities, and impacts.

The total research effort on cooperative purchasing in the State experiment stations is 0.8 scientific man-years.

#### PROGRESS -- USDA AND COOPERATIVE PROGRAMS

##### A. Improving sales and distribution methods

Purchasing cooperatives constantly need to be studying ways to increase volume to lower per unit handling costs, methods for developing more effective systems of distributing supplies and providing services to rural users, adjustments to changes in amount and type of supplies and services required by large farm operators, and improved methods of serving rural residents where suburban and industrial developments are expanding.

1. Feed. A report covering the study of 16 feed ingredient and supply buying groups in Illinois was completed. Principal findings were reported last year.

Another study of the organizational and operating features of 16 poultry feed bargaining groups in California was completed. Each group bargained with mills to manufacture specified formulas for their members. Principal findings were as follows: (1) Sixteen groups, formed from 1948 to 1963, had from 3 to 35 members. The feed requirements of the groups ranged from 1,380 to 27,100 tons a year with the median of about 7,200 tons. Members had flocks below average in size. (2) It appeared the groups had been successful in lowering feed prices to the minimum possible within the framework of the existing industry, and yet had maintained the quality of feed. (3) Based on limited information, members of some groups were getting formula feeds delivered to their ranches for as low as \$4.60 to \$5 a ton above weekly ingredient costs, with payment due 10 to 14 days after delivery date. (4) Indications were that individual poultrymen with flocks of more than 40,000 layers can obtain all the price concessions given to bargaining groups. (5) With the trend to larger flocks and more farm mills in California, small milling firms may have to increasingly depend on poultrymen with small flocks, most of whom will be members of some group.

Most of the field data were obtained for a study of the practices cooperatives employ in pricing feed at the wholesale and retail levels. Special attention is being given to various pricing schedules based upon types of quantity and volume discounts, cash discounts, and charges made for various services.

Preliminary findings indicate that among cooperatives in the Midwest and Eastern United States, considerable variation exists in policies and practices in pricing feed. Some regional wholesale cooperatives give quantity or volume discounts to their retail outlets, and most grant price adjustments or concessions to enable locals to meet competitive situations.

Approximately one-half of the retail outlets grant patrons a quantity discount often ranging from \$1 to \$3 a ton on individual feed orders of specified tonnages. Less than half the retail outlets grant patrons a volume discount of from \$1 to \$2 a ton when feed purchases over a given period of time reached a certain volume. Only a few of the retail outlets grant patrons both types of discounts. The amount of discounts is greatest in areas where there is the greatest disparity in the volumes purchased by individual farm operators.

2. Fertilizer. Most of the field data were obtained for a study of the practices of cooperatives in pricing fertilizer at the wholesale and retail level. Special attention is being given to pricing schedules based upon various types of quantity and volume discounts, preseason and cash discounts, and charges made for various types of services.

Preliminary findings indicate that among cooperatives in the Midwest and Eastern United States, wide variation exists in policies and practices in pricing fertilizer--greater than for feed. Very few regional wholesale cooperatives give quantity discounts on individual purchases or volume discounts on annual purchases to their retail outlets, but all offer discounts for preseason purchases. A majority make price adjustments or concessions to help locals meet unusual competitive situations.

Most retail cooperatives grant quantity discounts ranging from \$1 to \$3 a ton based on size of individual purchases by farmers. A number grant graduated volume discounts ranging from \$1 to \$6 based on amounts of annual purchases. Discounts are greatest in areas where there is the greatest disparity in volume bought by individual farmers.

A study was initiated under cooperative agreement with a State university on factors affecting the pricing of nitrogen and other fertilizers, with implications to farmer cooperative plants.

3. Farm supplies. A study of factors (economic and noneconomic) affecting buying decisions and behavior of commercial farmers purchasing farm inputs from cooperatives and others was initiated. This work will be conducted under contract by a State university.

## B. Potentials of cooperatives in farm production supplies and farm services

Studies were made of the present status and the possibilities of cooperatives procuring supplies and services more effectively for farmers and other rural residents. This includes diversification, integration, expansion in present operations and areas, and expansion into new areas and services. Research will aid directors and managers in planning and implementing programs.

1. Feed. A study was initiated through a contract with a State university to identify the factors and develop guidelines for determining the feasibility of establishing alfalfa dehydration plants.

2. Fertilizer. Work on a study of the present position and potential role of cooperatives in the fertilizer industry continues. Cooperatives distributed about 28 percent of all fertilizers farmers used in 1963-64. In recent years they have manufactured an increasing proportion of their nitrogen requirements, but they have only relatively small investments in basic phosphate and potash production operations. Cooperatives have an estimated total investment of about \$250 million in basic production facilities, exclusive of dry mixing plants. About double this amount probably would be needed to produce all of the basic materials they need.

3. Containers. The second phase of a study to determine possibilities for improving the procurement of containers for fresh fruits and vegetables was completed. It covered over 40 marketing associations in six North Central and Northeastern States. Some of the principal findings follow: (1) Container costs were equal to about 10 percent of the fruit and vegetable sales, or about \$85,000 per association in 1964. (2) The cooperatives purchased about 80 percent of their containers and packaging supplies directly from manufacturers and 20 percent from other sources. (3) They purchased 46 percent of such items for resale to grower-members. (4) Cooperatives paid a relatively wide range of prices for similar containers. Cash discounts were available to 90 percent and volume discounts, or brokerage allowances, were available to 73 percent of the group. (5) Opportunities for savings existed for the cooperative purchase of containers among marketing associations in areas where a large volume of containers are used, and also among growers who field pack their products. (6) Opportunities for the manufacture of containers and packaging supplies appeared to be very limited. However, one association has been realizing substantial savings in the manufacture of burlap and paper bags. (7) The most promising cooperative sponsors of container purchasing or manufacturing cooperatives are specialized regional marketing cooperatives. Membership in container purchasing or manufacturing cooperatives should be open to cooperative packers, independent packers, and individual grower-shippers. (8) To be most effective, container purchasing cooperatives should contract with a limited number of suppliers for containers needed throughout the entire packing season, and members of this cooperative should contract to purchase their entire requirements through it.



Another study, under contract, to determine possibilities for improving the procurement of containers for marketing processed fruits and vegetables is nearing completion.

4. Farm supply cooperatives serve low-income rural residents. A recently completed study of two farm supply cooperatives in low-income rural areas of Appalachia shows that these cooperatives are an important source of supplies for low-income people. Purchases by low-income patrons accounted for nearly half the total volume of the cooperatives studied. Sales were made without unduly extending the total volume of credit, and losses on credit extended to low-income patrons did not exceed losses on credit extended to other classes of patrons.

Sales of goods and services also were made without adding unusual or additional lines of goods or services to those normally provided by the cooperatives. The findings indicate that established cooperatives can perform a valuable service in some low-income areas and at the same time continue effective operations.

Contributions to gross margins of the cooperative was relatively greater from purchases made by the low-income and small farmer group than from other groups because that group bought feed and fertilizer in small quantities thus losing quantity discounts and also by concentrating relatively more of their purchases among items carrying high margins.

5. Frozen food provisioning. Preliminary findings from a study of the locker and freezer provisioning industry indicate that the number of firms in the industry is declining, while average size of firm is increasing. The average firm slaughtered more livestock, processed more meat, and offered a wider variety of services in 1965 than in 1960. The average locker cooperative was smaller than the average for all firms in the industry. Work in this area will continue.

C. Improving operating and handling methods for farm production supplies and frozen food processors

Studies were made to assist cooperatives in providing farmers with needed supplies and services in the least cost manner and by methods that save them time and labor on the farm.

1. Feed. Work on a study of the type, cost, operating expenses, problems, and benefits of bulk feed relay or transfer stations was deferred because of loss of key personnel.

2. Seed. Work on a study of the feasibility of bulk receiving and distribution of seed, including methods, costs, problems, and benefits, was deferred.

3. Frozen food provisioning. A study in this area found that a balanced promotion of both custom processing and processing for sale gave greater probability of financial success than promotion of either one alone. Slaughter and processing of locally produced products also contributed to financial success. Work in this area is continuing.

D. Improving the organization, financing, and management of farm supply and service cooperatives

Studies were conducted to determine ways to strengthen the organizational structure, finances, management, and coordination of various purchasing and service cooperatives so that they might improve their effectiveness in serving farmers and other rural residents.

1. Farm supplies. A study is nearing completion in a Midwest State to determine factors responsible for strong and weak supply associations. Both internal and external factors are being examined in depth in contrasting associations located near each other in the same type of farming and trading areas.

Preliminary findings indicate that internal factors are far more significant in determining the success of a supply association than are external factors. The most important internal factor is the competence of the manager to (1) recruit and train good employees, (2) recognize problems at an early stage and take decisive remedial action, (3) plan ahead, and (4) gain confidence of patrons and employees.

Important external factors are: (1) Basic groundwork done by pioneer cooperators which resulted in early and continued success, (2) use of the facilities and services of their affiliated regional cooperative, and (3) extent to which trade areas were restricted to county lines rather than to lines based on economic considerations. ;

Information was assembled for preparation of a biannual handbook on major regional cooperatives handling supplies. Data were obtained on 22 associations for their fiscal years ending in 1964 and 1965. During the period, two associations merged with other regionals and since then two additional associations have combined with other associations. The report will provide smaller cooperatives, colleges, government agencies, and others with highlights on the membership, structure, type of business, net savings, and other features of some of the largest regional supply cooperatives.

Further work was done on a study of a highly diversified and integrated regional supply and marketing cooperative in the Pacific Northwest. The analysis covers its structure, policies, practices, and operations; how it has adjusted to changing conditions for over 49 years; and its benefits and services to farmer-members. Findings should be helpful to leaders of other cooperatives in making decisions for developing broader and more effective supply and marketing services to farmers.



2. Rural credit unions. A report on the activities, accomplishments and status of rural credit unions in the United States was revised and published during the year. This study shows that rural credit unions have made a material contribution to the capital and credit needs of many rural groups and provide a systematic means of organized savings for some 258,000 members.

The \$113 million in share-savings of 670 rural credit unions at the end of 1963 represented money saved by members and made available to help meet credit needs of the community. Of this amount \$98 million was outstanding in loans to members at the end of the year. During the 8-year period, 1956 to 1963, membership in rural credit unions increased 78 percent, share-savings and loans increased 139 percent, and assets increased 150 percent.

Farm supply cooperatives and general farm organizations have played a leading role in sponsoring the organizations of rural credit unions. The study showed that more than half of the existing rural credit unions are affiliated with these two types of sponsoring organizations.

An educational circular was revised and published during the year. This publication provides information on the basic principles of rural credit unions; and information on how to organize, operate, and use rural credit unions for the mutual benefit of members. It is expected that this publication will be used extensively by Vocational Agriculture teachers, by workers in low-income rural areas, and by farm cooperatives interested in sponsoring the organizations among their members.

3. Production services. A report on the PCA-Cooperative Patron Credit Program was completed and published. This program was developed jointly by production credit associations and farm supply cooperatives to help finance the purchase of farm supplies by cooperative patrons. It provides the farmer with over-the-counter credit in limited amounts and enables a cooperative to provide this service without adding to its accounts receivables burden. Further, the program assists the cooperative in establishing a rational credit policy with the net effect of shifting the cost of credit from the total membership to those who are using the credit. In 1965 the program was being used by 953 cooperatives and farm supply dealers. Loans totaled \$11 million. This includes only those loans for which the cooperatives have guaranteed collection.

In some respects the plan is transitional in nature. Some farmers after using the plan for a year or two shift to obtaining credit directly from the PCA as members.

4. Cooperative insurance. An analysis was made of a cooperative oil mill's insurance program. The analysis showed that 65 member gins affiliated with the oil mill and participating in a group insurance plan are saving approximately 35 percent on the cost of fire insurance. The analysis also showed the possibility of an additional savings of \$50,000 by organizing and operating a mutual insurance company.

Also, a study has been initiated on the trend in merger and consolidation among farmers' mutual fire insurance companies.

5. Frozen food provisioning. Guidelines and procedures to help improve the decision making process are being developed for use of management of locker and freezer provisioners. This study is being conducted under contract by Iowa State University.

#### PUBLICATIONS--USDA AND COOPERATIVE PROGRAMS

##### Improving Sales and Distribution Methods

Mutti, R. J., and McGinnis, L. J. 1966. Operations of Local Feed and Supply Bargaining Cooperatives in Illinois, 1959-64. FCS General Report 136.

##### Potentials of Cooperatives

Bailey, J. M. 1966. Cooperatives Need Strong Base in Frozen Food Field. News for Farmer Cooperatives (Feb.).

Bailey, J. M. 1966. Cooperatives Investment to Enter Freezing. Quick Frozen Foods (May).

Hyre, F. M. 1966. Farm Business Services Growing for Coming Generations. News for Farmer Cooperatives. (Jan.).

##### Improving Operating and Handling Methods

Seymour, W. R. 1966. Changing Role of Frozen Food Locker Cooperatives. FCS Service Report 83.

##### Improving Organization, Financing and Management Practices

Abrahamsen, M. A., and Mather, J. W. 1966. Approaches and Problems in Merging Cooperatives. FCS Information 54.

Hyre, F. M. 1966. The PCA Cooperative-Patron Credit Plan. FCS General Report 135.

Mather, J. W. 1966. Supply Cooperatives Merge, Build, and Grow Stronger. News for Farmer Cooperatives (Jan.).

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### AREA NO. 3: COOPERATIVE ORGANIZATION, MANAGEMENT, AND TRANSPORTATION

Problem: The cooperative way of doing business continues to increase in rural America. Business volume of marketing, farm supply, and related-service cooperatives is on an upward trend. New cooperatives are being organized to serve low-income rural residents. Mergers, consolidations, and acquisitions by established cooperatives are taking place at an accelerated rate. These events all increase the demand for the research, advisory and educational services relating to cooperative organization, management and transportation.

Research is needed to provide cooperatives' membership and management with findings on the most efficient ways to finance their associations; how to distribute patronage refunds on the most equitable basis; how to bring about mergers and consolidations most effectively; how cooperatives should be structurally organized for greatest efficiency; how traffic management departments can operate to lower transportation costs; how methods of transporting grain can be improved; how cooperative assembly, transportation, and distribution associations can best serve small producers in low-income rural areas; how economic and legal conditions affect cooperatives; and how the communication effectiveness of cooperatives can be increased in order to more favorably influence members and the general public. In order to strengthen cooperatives, it is also necessary to collect and analyze information on cooperatives on a continuing basis and to publish reports on their progress.

#### USDA AND COOPERATIVE PROGRAM

The Department has a continuing program of basic and applied research and technical assistance to help farmers strengthen the organization structures of their cooperatives, improve their management, build effective membership relations, and develop and maintain efficient cooperative transportation services. In connection with the AID program the Department seeks to strengthen cooperatives in developing countries by improving the efficiency of their production and marketing methods. This Agency supports that objective by providing technical and educational assistance to governmental and private institutions concerned with the development of cooperatives in these countries. The Department program also includes increased emphasis on feasibility studies of new enterprises to assist farmers in low-income rural areas, as part of the Rural Areas Development Program. In addition increased emphasis is being given to promotion of rural cooperatives through programs of technical and educational assistance. This work will aid in the implementation of the Economic Opportunity Act, Public Work and Economic Development Act, the Appalachian Redevelopment Act, and the many special programs of the U. S. Department of Agriculture and other Federal and public agencies that work in the area of cooperative development.

The work is centered in Washington, D. C. Many of the studies, however, are conducted in cooperation with State colleges, experiment stations and extension services, and departments of agriculture.



Federal scientific man years devoted to research in this area totaled 6.6. Of this amount 3.6 was devoted to organization, management, finance, cooperative trends, and membership relations and 3.0 to transportation and physical distribution.

Research also is conducted under contract with land-grant colleges, universities, cooperatives, and private research organizations. During this reporting period contracts were in effect with Iowa State University, Oregon State University, and Mississippi State University.

#### PROGRAM OF STATE EXPERIMENT STATIONS

A large part of the research in this area is devoted to the financing problems of cooperatives. This involves study of the financial structure and financing methods of cooperatives to determine those that are the most satisfactory from the standpoint of providing adequate capital for growth and treating patrons equitably.

Other research deals with cooperative information sources in performing management functions of planning and controlling, membership control of cooperatives, and socio-economic relationships existing between low-income farmers and the cooperatives to which they belong.

A total of 2.1 scientific man years is being devoted to research in this area.

#### PROGRESS--USDA AND COOPERATIVE PROGRAMS

##### A. Organization and management

A study of the stated objectives of predecessor organizations versus achieved objectives of farmer cooperative mergers is underway. This study is being conducted under a cooperative agreement with Oregon State University.

##### B. Cooperative financing

1. Capital structure. Work continued on a nationwide survey of the capital structure of all farmer marketing, farm supply and related service cooperatives. A report was published containing information on the financial structure of 448 regional farmer cooperatives. The findings indicate that regional farmer cooperatives, as a group, are sound business organizations.

Combined assets of the 448 regionals amounted to nearly \$3 billion at the close of fiscal years ended in 1962. Current assets amounted to 59 percent of this total; current liabilities, 38 percent, resulting in a current ratio of 1.55. Combined equity capital amounted to \$1.5 billion or 50 percent of total assets. Fifteen percent of combined equity capital was purchased outright by patrons and others, 54 percent was acquired through investment of patronage refunds, 10 percent through per-unit capital retains, and the other 21 percent was acquired by a combination of these three methods. Over 65



percent of total equities were noninterest bearing, and less than 2 percent bore interest at rates exceeding 6 percent per annum. Combined borrowed capital ranged from over \$1 billion (excluding Commodity Credit Corporation loans to tobacco marketing regionals) during the 1962 peak period to \$619 million at the close of the 1962 fiscal period. Banks for cooperatives supplied 60 percent of borrowed capital unpaid at year-end fiscal dates as compared to 20 percent supplied by individual and 11 percent supplied by commercial banks. The 448 associations reported combined net savings of \$288.4 million of which 44.5 percent was paid in cash patronage refunds and 7.4 percent in cash dividends and interest on equity capital.

2. Patronage refunds. Work continued on a study of the equitability of patronage refund practices. The first phase of the study analyzed the computation and distribution methods used by 18 farm supply, marketing, and multi-purpose regional cooperatives in making patronage refunds. Preliminary findings indicate that equitability is achieved when patronage refund rates are closely related to a product or a homogenous grouping of products or services than would be the case with dissimilar items or services that may produce margins of greater variability. Four major methods of computing patronage refunds were used: (1) On a total business basis, (2) on a divisional basis, (3) on a departmental basis, and (4) a combination of methods. Major problem areas reported by management include treatment of: (1) divisional and departmental losses, (2) nonpatronage income; (3) large versus small patrons, (4) small refunds, and (5) depreciation policies.

### C. Cooperative trends

Information supplied by marketing, farm supply, and related service cooperatives on their business volumes and memberships in the 1963-64 period indicated that total business volume continued its upward trend, while the number of cooperatives and memberships continued to decrease slightly.

Total gross volume of business, including interassociation business, amounted to \$19.3 billion -- up 5 percent over the \$18.3 billion reported in the previous year. Total net business, after adjusting the gross figure for business done between cooperatives, amounted to \$14.4 billion. This represented an increase of 3.9 percent over the \$13.8 billion net reported in 1962-63 and 49 percent over the total net business of \$9.6 billion in 1954-55 -- the first of 10 years during which the total net business volume of farmer cooperatives has steadily risen.

The total number of farmer cooperatives was 8,847. This was a decrease of 60 associations, or 0.7 percent, from the 8,907 cooperatives in the previous year. For several years, reorganizations involving mergers, consolidations, and acquisitions have had an important influence on the downward trend in total number of cooperatives. These reorganizations have been made largely for the purpose of improving operations and expanding services to meet the changing needs of farmer patrons.

The total number of memberships in farmer cooperatives decreased from 7,218,750 in 1962-63 to 7,079,500 in 1963-64, a decline of 1.9 percent. The steadily declining number of farmers in the United States is primarily responsible for the continuing downward trend in cooperative memberships.

A supplemental study based on the 1963-64 study of farmer cooperatives was made to determine trends in cooperative business size. Changes in business size are indicated by some highlights of the analysis. Almost 30 percent of the farmer cooperatives had business volumes of \$1 million or more in 1963-64. In 1959-60, less than 25 percent of the associations studied had business volumes this size. Over 3 percent of the cooperatives had business volumes of \$10 million or more in 1963-64 compared with only 2.4 percent in 1959-60 (65 associations, not quite 1 percent of the total, had business volumes of \$50 million or more in 1963-64). Among the marketing cooperatives, over 40 percent reported business volumes in excess of \$1 million. In 1959-60, less than 32 percent of the marketing associations had business volumes this large. Almost 15 percent of the farm supply cooperatives reported business volumes of \$1 million or more in 1963-64 compared with only 12.7 percent in 1959-60.

None of the related-service cooperatives -- those that primarily perform drying, ginning, grinding, storage, trucking, and other services related to marketing farm products or handling farm supplies -- reported business volumes of \$1 million or more in 1963-64. This is consistent with business volumes reported for these organizations in 1959-60.

A study has been initiated to determine trends in fertilizer manufacturing and distribution by farmer cooperatives. Data on the physical volumes handled and the number and types of facilities operated will be obtained. The study will determine the various fertilizer services and functions cooperatives perform and evaluate the major factors considered by farmer cooperatives in expanding and integrating their fertilizer operations.

#### D. Improving Membership Relations Programs of Cooperatives

Farmer cooperatives can thrive only if they receive adequate volumes of patronage. Experience demonstrates that well-informed members are more inclined to patronize their cooperative. In addition, the economic and legal climate in which they operate depends in part on how well cooperatives tell their story to the general public.

During the period under review the urban phase of a three-phase study of the attitudes of Kansans toward cooperatives was completed. The findings of this phase were reported in the previous annual report. The final phase, farmer attitudes toward cooperatives, revealed that farmers' attitudes toward cooperatives were mostly neutral or indifferent. Findings of the three phases of the Kansas study suggest that more cooperatives need to plan and carry on a continuous program of member and public education, and that the State cooperative council has an important role in creating favorable public attitudes toward cooperatives.

A somewhat similar study, but broader in scope, has been initiated in Mississippi under a cooperative agreement with Mississippi State University.

E. Transportation and physical distribution by farmer cooperatives

1. Loss and damage to agricultural products in transit. A report of findings was completed on a study of weight losses on 13,611 rail shipments of grain from 107 elevators and 777 barge shipments of grain from river facilities of six regional grain marketing cooperatives. The study showed that losses during handling and transportation amounted to 558 pounds of grain per car shipped. Of 700 rail cars furnished to elevators for loading, 85 percent were found to have defects that could contribute to losses. The study also showed that less than half of the 107 elevator managers filed claims for recovery of losses although all experienced such losses.

2. Motortruck Operations and Costs. A report of findings on a study of costs and practices of cooperatives in operating bulk-feed trucks was published. Principal findings of the study are: (1) Total truck operating costs per ton of feed delivered ranged from \$2.39 to a high of \$7.09 and averaged \$2.89. (2) Truck operating costs, less administrative expenses, averaged 48 cents a mile operated. The report recommended that detailed truck cost and performance records be maintained on individual trucks rather than on a fleet basis only.

3. Grain transportation and handling by farmer cooperatives. Preliminary findings of a study of ownership and leasing of covered hopper cars by cooperative include: (1) The major reason cooperatives operate their own hopper cars was to help alleviate a chronic shortage of boxcars. (2) The 5 1/2 cents a mile loaded and empty allowance paid by the railroads for use of shipper owned or leased hopper cars contributes to wasteful transportation. The allowance should apply on loaded miles only as this would encourage the shipper to seek return loads in his equipment. (3) There are opportunities for shippers to reduce costs by owning rather than leasing hopper cars.

Preliminary findings of a study of transportation factors in marketing soybeans, cottonseed, and their products by farmer cooperatives show: (1) The sixteen cooperative oil mills studied handled 2 million tons of cottonseed, 4 million tons of soybeans, 900,000 tons of oil and 4 million tons of meal over a three-year period at a transportation cost of about \$33 million, (2) railroads hauled 79 percent of the cottonseed oil and 68 percent of the soybean oil, and (3) milling-in-transit privileges are not granted to cottonseed oil mills but are an important factor in soybean processing and transportation.

4. Traffic management in farmer cooperatives. Work has been initiated on a study of traffic management departments in nine farmer cooperatives. The study is designed to determine the duties and performance of the traffic department; its place in the organizational structure; and knowledge and

understanding, at various management levels of the duties and responsibilities of the traffic department. These factors will be evaluated to determine the part the traffic department plays in such management decisions as market determination and expansion, plant and facility location, and product pricing.

A study is underway to determine the possibilities for developing a least-cost distribution system for cooperative marketing of honey.

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##### Organization and Management

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- Griffin, N. 1965. Training Cooperative Employees for Professional Growth. American Cooperation 1965.
- Swanson, B. L. 1966. Cooperative Business-A Decade of Progress. News for Farmer Cooperatives (Jan.).
- Swanson, B. L. 1966. Statistics of Farmer Cooperatives, 1963-64. FCS General Report 134.
- Volkin, D. 1966. Working With People on Business Problems. News for Farmer Cooperatives (Jan.).

##### Cooperative Financing

- Griffin, N. 1965. Financial Structure of Regional Farmer Cooperatives. Proceedings of Cooperative Month Observance.
- Griffin, N. 1966. Financial Structure of Regional Farmer Cooperatives. FCS General Report 133.
- Neely, D. and Volkin, D. 1966. Per-Unit Capital Retains-Tax Treatment by Cooperatives and Patrons. FCS Information 51.

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- LeBeau, O. R. and Hardy, C. E. 1965. Regional Meetings Feature Idea Exchanges. News for Farmer Cooperatives (Oct.).
- Rust, I. W. 1966. Member Education - An Area for Joint Action. News for Farmer Cooperatives (Jan.).
- Rust, I. W. 1966. Should Cooperatives Tighten Membership Requirements? FCS Educational Circular 27.



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Holroyd, W. M. 1966. Distribution Savings Mean Savings to Distribute. News for Farmer Cooperatives (Mar.).

#### RELATED PUBLICATION OF STATE EXPERIMENT STATIONS

Burke, B. M., Scott, M. C., and Hall, C. R. 1965. Equity Among Members Of New Mexico Cooperative Cotton Gins. Bulletin 501. Agricultural Experiment Station. New Mexico State University.

Brown, E. E. and Thompson, J. C. 1965. The Economic Contribution of Georgia's Agricultural Cooperatives. Bulletin N. S. 131. Agricultural Experiment Station. University of Georgia.

Erdman, H. E. and Larsen, G. H. 1965. Revolving Finance in Agricultural Cooperatives. Mimir Publishers, Inc. Madison, Wisc.



Line Project Check List -- Reporting Period September 1, 1965 to September 30, 1966

| Work &<br>line project<br>number | Work and line project titles                                                                                                                        | Work locations<br>during past period                  | Line proj. incl. in       |                           |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------|---------------------------|
|                                  |                                                                                                                                                     |                                                       | Summary<br>of<br>progress | Area &<br>sub-<br>heading |
| a-1-1                            | <u>Research, service and educational assistance<br/>for cotton and oilseed cooperatives</u>                                                         |                                                       |                           |                           |
| a-1-1-4                          | Organizational structure and operations of<br>cotton cooperatives in Lubbock area of<br>Texas                                                       |                                                       | Yes                       | 1-D                       |
| a-1-1-5                          | Cooperative marketing and processing of<br>cottonseed and soybeans and their products                                                               | Ariz., Ark., Calif.,<br>Miss., N.Mex., Okla.,<br>Tex. | Yes                       | 1-D                       |
| a-1-1-6*                         | Advisory and educational assistance to<br>cotton cooperatives on their problems<br>relating to organization, operations,<br>procedures and policies | Ariz., Ark., Calif.,<br>Miss., N.Mex., Okla.,<br>Tex. | Yes                       | 1-B-C-D                   |
| a-1-2                            | <u>Research, service and educational assistance<br/>for dairy cooperatives</u>                                                                      |                                                       |                           |                           |
| a-1-2-10                         | Advisory and educational assistance to dairy<br>cooperatives on their problems relating to<br>organization, operations, procedures and<br>policies  | Kans. Mo., N.Y.,<br>Wash.                             | Yes                       | 1-C-D                     |
| a-1-3                            | <u>Research, service and educational assistance<br/>for frozen food locker cooperatives</u>                                                         |                                                       |                           |                           |
| a-1-3-4**<br>(Rev. #2)           | Frozen food locker and freezer provisioning<br>plants in a national emergency                                                                       | Wash., D.C.                                           | No                        |                           |
| a-1-3-6<br>(Rev. #2)             | Advisory and educational assistance to<br>frozen food locker and related processing<br>and merchandising cooperatives                               | Wash., D.C.                                           | No                        |                           |
| a-1-3-9                          | The role and methods of locker and related<br>processing cooperatives in processing and<br>merchandising locally produced food<br>products          | Wash., D.C.                                           | Yes                       | 2-C                       |
| a-1-3-10*                        | An appraisal of the facilities and opera-<br>tions of frozen food locker and freezer<br>provisioning cooperatives                                   | Wash., D.C.                                           | Yes                       | 2-B                       |
| a-1-3-11*                        | Comparison of operating performance and<br>adjustments of frozen food locker coop-<br>eratives, 1960-1965                                           | Wash., D.C.                                           | Yes                       | 2-C                       |
| a-1-4                            | <u>Research, service and educational assistance<br/>for fruit and vegetable cooperatives</u>                                                        |                                                       |                           |                           |
| a-1-4-15<br>(Rev.)               | Advisory and educational assistance to<br>fruit, vegetable, and nut cooperatives on<br>organizational and operational problems                      | Fla., Maine, N.Y.,<br>Wash., D.C.                     | Yes                       | 1-A-D                     |
| a-1-4-17                         | Scope and potentials in marketing fruits,<br>vegetables, and nuts by cooperatives                                                                   | Wash., D.C.                                           | Yes                       | 1-B                       |

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|                                  |                                                                                                                                                                      |                                                                                                 | Summary<br>of<br>progress | Area &<br>sub-<br>heading |
| a-1-5                            | <u>Research, service and educational assistance<br/>for grain cooperatives</u>                                                                                       |                                                                                                 |                           |                           |
| a-1-5-5<br>(Rev. #2)             | Comparative operating efficiency of regional<br>grain cooperatives                                                                                                   | United States                                                                                   | Yes                       | 1-D                       |
| a-1-5-8                          | Accounting exercises for cooperative grain<br>elevator personnel                                                                                                     | Midwestern States                                                                               | Yes                       | 1-D                       |
| a-1-5-10<br>(Rev.)               | Comparative operating efficiency of coopera-<br>tive soybean oil mills                                                                                               | Midwestern and<br>Southern States                                                               | Yes                       | 1-D                       |
| a-1-6                            | <u>Research, service and educational assistance<br/>for livestock and wool cooperatives</u>                                                                          |                                                                                                 |                           |                           |
| a-1-6-12<br>(Rev.)               | Operations and organization of State and<br>regional wool marketing cooperatives and<br>National Wool Marketing Corporation                                          | United States                                                                                   | No                        |                           |
| a-1-6-17<br>(Rev.)               | Advisory and educational assistance to live-<br>stock and wool cooperatives on their<br>problems relating to organization, oper-<br>ations, procedures, and policies | United States                                                                                   | Yes                       | 1-A-C                     |
| a-1-/                            | <u>Research, service and educational assistance<br/>for poultry cooperatives</u>                                                                                     |                                                                                                 |                           |                           |
| a-1-7-12<br>(Rev. #2)            | Advisory and educational assistance to<br>poultry cooperatives on their problems<br>relating to organization, operations,<br>procedures and policies                 | Calif., Conn., Me.,<br>Mass., N.H., N.J.,<br>N.Y., R.I.                                         | Yes                       | 1-D                       |
| a-1-7-16                         | Organizational structure, operations and<br>accomplishments of Western Farmers<br>Association                                                                        | Wash., D.C.                                                                                     | Yes                       | 1-D                       |
| a-1-8                            | <u>Research, service and educational assistance<br/>for cooperatives handling special crops</u>                                                                      |                                                                                                 |                           |                           |
| a-1-8-5<br>(Rev.)                | Advisory and educational assistance on<br>organizational and operational problems<br>of special crops cooperatives                                                   | Ga., La., Vt.,<br>Wash., D.C.                                                                   | No                        |                           |
| a-1-8-8                          | Advisory and educational assistance on<br>organizing and operating forestry-based<br>cooperatives                                                                    | Ga., Ky., Mich.,<br>Minn., N.C., Ohio,<br>Pa., S.C., Tenn.,<br>Va., Wash., D.C.<br>W.Va., Wisc. | Yes                       | 1-B-D                     |
| a-1-9                            | <u>Research, service and educational assistance<br/>for farm supply cooperatives</u>                                                                                 |                                                                                                 |                           |                           |
| a-1-9-25<br>(Rev. #2)            | Advisory and educational service on current<br>organizational and operational problems<br>of farm supply cooperatives                                                | Ohio, Wash., D.C.                                                                               | Yes                       | 2-D                       |

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|                                  |                                                                                                                                                    |                                                  | Summary<br>of<br>progress | Area &<br>sub-<br>heading |
| a-1-9-34                         | The place of cooperatives in the fertilizer industry                                                                                               | United States                                    | Yes                       | 2-B                       |
| a-1-9-35                         | Pricing of feed and fertilizer by cooperatives                                                                                                     | Iowa, Kans., Minn., Mo., Nebr., N.D., S.D., Wis. | Yes                       | 2-A                       |
| a-1-9-36*                        | Annual information on organizational, operating, and financial aspects of major regional cooperatives handling supplies                            | Wash., D.C.                                      | Yes                       | 2-D                       |
| a-1-9-37(CA)*                    | Economic and noneconomic factors affecting buying decisions and behavior of commercial farmers purchasing farm inputs from cooperatives and others | Ill.                                             | Yes                       | 2-A                       |
| a-1-10                           | <u>Research, service and educational assistance for cooperatives providing rural services</u>                                                      |                                                  |                           |                           |
| a-1-10-4                         | Advisory and educational assistance on current organizational and operational problems of farm business service cooperatives                       | Tex., Wash., D.C.                                | Yes                       | 2-D                       |
| a-1-10-8**                       | Study of methods for production credit association financing of patrons of farm supply cooperatives                                                | Wash., D.C.                                      | Yes                       | 2-B                       |
| a-1-10-9                         | Characteristics and opportunities of cooperatives serving low-income farmers                                                                       | W.Va.                                            | Yes                       | 2-B                       |
| a-1-10-10*                       | Characteristics and opportunities of credit unions operating in low-income rural areas                                                             | Wash., D.C.                                      | No                        |                           |
| a-1-10-11(CA)*                   | An analysis of the impact of mergers on artificial breeding cooperatives and their members                                                         | Del., N.J., N.Y., Pa.                            | No                        |                           |
| a-1-10-12*                       | Mergers and consolidations among farmers mutual fire insurance companies                                                                           | Wash., D.C.                                      | Yes                       | 2-D                       |
| a-1-11                           | <u>History and statistics of cooperation</u>                                                                                                       |                                                  |                           |                           |
| a-1-11-4<br>(Rev.)               | Service and educational assistance in developing and disseminating statistical information on agricultural cooperation                             | Wash., D.C.                                      | No                        |                           |
| a-1-11-9                         | Trends in fertilizer manufacturing and distribution by farmer cooperatives                                                                         | Wash., D.C.                                      | Yes                       | 3-C                       |
| a-1-11-11                        | Annual statistical survey of farmer marketing, farm supply, and related service cooperatives                                                       | Wash., D.C.                                      | Yes                       | 3-C                       |

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|                                  |                                                                                                                                          |                                                                                | Summary<br>of<br>progress | Area &<br>sub-<br>heading |
| a-1-12                           | <u>Research, service and educational assistance<br/>on business administration problems of<br/>cooperatives</u>                          |                                                                                |                           |                           |
| a-1-12-14<br>(Rev.)              | Advisory and educational assistance on<br>current organizational and operational<br>problems of cooperatives                             | Ga., Kans., N.Y.,<br>Pa., Wash., D.C.                                          | No                        |                           |
| a-1-12-17                        | Analysis of financial structure of farmer<br>cooperatives                                                                                | United States                                                                  | Yes                       | 3-B                       |
| a-1-12-19                        | Developing educational and interpretive<br>material to assist farmer cooperatives<br>to comply with Federal income tax laws              | Wash., D.C.                                                                    | No                        |                           |
| a-1-12-20                        | Evaluation of the equitability of patronage<br>refund distribution methods employed by<br>farmer cooperatives                            | Ill., Iowa, Kans.,<br>Minn., Mo., Neb.,<br>Okla., S.Dak., Wis.,<br>Wash., D.C. | Yes                       | 3-B                       |
| a-1-12-21                        | Analysis of the stated versus achieved<br>objectives of farmer cooperative mergers                                                       | Ore.                                                                           | Yes                       | 3-A                       |
| a-1-13                           | <u>Research, service and educational assistance<br/>on membership problems of cooperatives</u>                                           |                                                                                |                           |                           |
| a-1-13-12<br>(Rev. #2)           | Providing professional advice and assistance<br>on organization and conduct of research<br>in cooperative membership relations           | Ill. Kans., Nebr.,<br>Miss., Puerto Rico,<br>Wisc.                             | No                        |                           |
| a-1-13-13<br>(Rev. #2)           | Planning training programs in agricultural<br>cooperation for foreign nationals                                                          | World-wide                                                                     | No                        |                           |
| a-1-13-14<br>(Rev.)              | Helping farmer cooperatives to strengthen<br>their membership relations programs and<br>activities                                       | Ill., Mont.                                                                    | No                        |                           |
| a-1-13-18                        | Strengthening member and public relations<br>programs of farmer cooperatives in Kansas                                                   | Kans.                                                                          | Yes                       | 3-D                       |
| a-1-13-19(CA*)                   | Providing information to help rural people<br>understand and use cooperatives effec-<br>tively in Mississippi                            | Miss.                                                                          | Yes                       | 3-D                       |
| a-1-13-20*                       | Preparing cooperative educational material                                                                                               | Wash., D.C.                                                                    | No                        |                           |
| a-1-13-21*                       | Developing cooperative education and<br>training programs                                                                                | Calif., Ill., La.,<br>Minn., Mont., Puerto<br>Rico, Va.                        | No                        |                           |
| a-1-14                           | <u>Research, service and educational assistance<br/>on transportation problems of cooperatives</u>                                       |                                                                                |                           |                           |
| a-1-14-7<br>(Rev. #2)            | Analysis of transportation costs and<br>practices in the development of marketing<br>and purchasing programs of farmers'<br>cooperatives | Colo., Ga., Idaho,<br>Ill., Iowa, Kans.,<br>Minn., Mo., Nebr.,<br>Ore., Wash.  | No                        |                           |



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|                                  |                                                                                                                                                                  |                                          | Summary<br>of<br>progress | Area &<br>sub-<br>heading |
| 1101                             | <u>Efficiency of farmers' business firms in<br/>marketing farm products</u>                                                                                      |                                          |                           |                           |
| 1101-21(C)<br>(Rev.)             | Improving methods of cooperative marketing agencies and growers in procuring containers and packaging supplies for fresh fruits and vegetables                   | Maine, Mich., N.J.,<br>N.Y., Ohio, Pa.   | Yes                       | 2-B                       |
| 1101-22(C)**                     | A study on the economics of drying and storing rough rice                                                                                                        | La.                                      | Yes                       | 1-C                       |
| 1101-26                          | Costs and economic effects of storing seed cotton by improved methods, with emphasis on cooperative gins                                                         | Calif., Tex.,<br>Wash., D.C.             | Yes                       | 1-B-C                     |
| 1101-28(C)                       | Appraisal of the operations of local cooperative buying groups of farmers in purchasing feed ingredients and formula mixed feeds                                 | Calif., Ill.                             | Yes                       | 2-A                       |
| 1101-29(C)                       | Improving methods of cooperative marketing agencies in procuring containers and packaging supplies for processed fruits and vegetables                           | Calif., Fla., Ore.,<br>Wash.             | Yes                       | 2-B                       |
| 1101-30                          | Development of improved operating information systems based on cost accounting procedures for cooperative dairy manufacturing plants                             | Wash., D.C.                              | Yes                       | 1-C                       |
| 3101                             | <u>Developing more efficient use of transportation services and facilities by<br/>farmers' marketing agencies</u>                                                |                                          |                           |                           |
| 3101-10<br>(Rev. #2)             | Relation of transportation and handling practices and conditions in moving livestock from farms to initial destinations and processing plants to loss and damage | Wash., D.C.                              | No                        |                           |
| 3101-13**                        | Determination of costs, characteristics and efficiency of transportation of agricultural commodities by farmer cooperatives                                      | Calif., Ill., N.J.,<br>N.Y., Ore., Wash. | Yes                       | 3-E                       |
| 3101-14**                        | Relation of specific handling practices and conditions to loss and damage to grain in transit to and from country and terminal elevators                         | Iowa                                     | Yes                       | 3-E                       |
| 3101-15                          | Evaluation of traffic management in farmer cooperatives                                                                                                          | Ga.                                      | Yes                       | 3-E                       |
| 3101-16(C)                       | Evaluating transportation factors in marketing soybeans, cottonseed, and their products by farmer cooperatives                                                   | Ark., Iowa, Minn.,<br>Miss., Okla., Tex. | Yes                       | 3-E                       |

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|                                  |                                                                                                                                                |                                       | Summary<br>of<br>progress | Area &<br>sub-<br>heading |
| 3101-17                          | Farmer Cooperative Service cooperation in SM-29, "Optimal Adjustments of Southern Grain Marketing Facilities to Present and Future Conditions" | Southeastern States                   | Yes                       | 1-D                       |
| 3101-18*                         | Evaluating effects of changing transportation rates and services on grain handling practices of farmer cooperatives                            | La., Tex.                             | Yes                       | 3-E                       |
| 3102                             | <u>Pricing plans and methods of farmers' marketing agencies</u>                                                                                |                                       |                           |                           |
| 3102-13**                        | Evaluating adjustments in grower payment methods of Florida citrus marketing organizations as a result of the 1962 freeze                      | Fla.                                  | Yes                       | 1-A                       |
| 3102-14                          | Study of pooling and producer payment practices of egg marketing cooperatives and others                                                       | Wash., D.C.                           | Yes                       | 1-A                       |
| 3102-15                          | An appraisal of functions and potentials of broiler auctions                                                                                   | Del., Ga., Md., Pa., Va., W.Va., Tex. | Yes                       | 1-B                       |
| 3102-16                          | Evaluation of principles and methods used by dairy cooperatives in pooling marketing costs and sales returns                                   | Wash., D.C.                           | Yes                       | 1-A                       |
| 3102-17                          | An appraisal of the status, role, capabilities, and future of cooperative bargaining associations                                              | United States                         | Yes                       | 1-A                       |
| 3103                             | <u>Improving processing and storage facilities and techniques of farmers' marketing agencies</u>                                               |                                       |                           |                           |
| 3103-20                          | Developing methods and data frozen food locker and related small processing firms need for improving facilities planning and product handling  | Iowa                                  | Yes                       | 2-D                       |
| 3103-21**                        | Study of facilities and operations of locker and freezer provisioning firms in the United States                                               | Wash., D.C.                           | Yes                       | 2-B                       |
| 3103-22                          | Inventory control practices and policies at local grain cooperatives                                                                           | Major grain producing areas           | Yes                       | 1-D                       |
| 3103-23(C)*                      | Factors determining the feasibility of alfalfa dehydration by cooperatives and other firms                                                     | Colo., Kans., Mont., Nebr.            | Yes                       | 2-B                       |
| 3104                             | <u>Improving distribution methods and facilities of farmers' marketing firms</u>                                                               |                                       |                           |                           |
| 3104-14                          | Alternatives for cooperatives and livestock producers in integrating production and marketing livestock and meat                               | United States                         | Yes                       | 1-B                       |

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|                                  |                                                                                                                                                      |                                      | Summary<br>of<br>progress | Area &<br>sub-<br>heading |
| 3104-18                          | The influence of changing procurement practices on the marketing of Florida fresh citrus fruits                                                      | Fla.                                 | No                        |                           |
| 3104-22**                        | Farmer Cooperative Service cooperation in NEM 28 (Analysis of trends pointing to future consumption and market potential for meats in the Northeast) | Northeastern States                  | No                        |                           |
| 3104-26                          | Organizational structure, operations and potentials of coordinated fruit and vegetable marketing programs                                            | Wash., D.C.                          | Yes                       | 1-B                       |
| 3104-28                          | An appraisal of coordinated marketing activities used by dairy cooperatives                                                                          | Wash., D.C.                          | Yes                       | 1-A-B                     |
| 3104-29                          | A determination and evaluation of the role of cooperatives in the market structure of selected major potato producing areas of the United States     | Colo., Idaho                         | Yes                       | 1-B                       |
| 3104-30                          | Improving coordination of sales and distribution of dairy products manufactured by dairy cooperatives                                                | Wash., D.C.                          | Yes                       | 1-A                       |
| 3104-31*                         | FCS cooperation in NCM-38, "Dairy Market Adjustment Problems in the North Central Region"                                                            | Wash., D.C.                          | Yes                       | 1-B                       |
| 3104-32(CA)*                     | Potential of fruit and vegetable cooperatives on the Coastal Plains of North Carolina                                                                | N.C.                                 | Yes                       | 1-B                       |
| 3104-33*                         | An appraisal of the status, role, capabilities, and future of farmers' turkey marketing cooperatives                                                 | Minn., Mo., Tex., Utah               | Yes                       | 1-B                       |
| 0-0-2(DC)(C)                     | Economic feasibility for cooperative forest-based management, marketing, and processing enterprises                                                  | W.Va.                                | Yes                       | 1-B                       |
| 0-0-3(EDA)(C)*                   | Economic feasibility of livestock-meat processing and marketing cooperatives in Vermont                                                              | Northeastern States                  | No                        |                           |

\*Initiated during reporting period

\*\*Discontinued during reporting period







